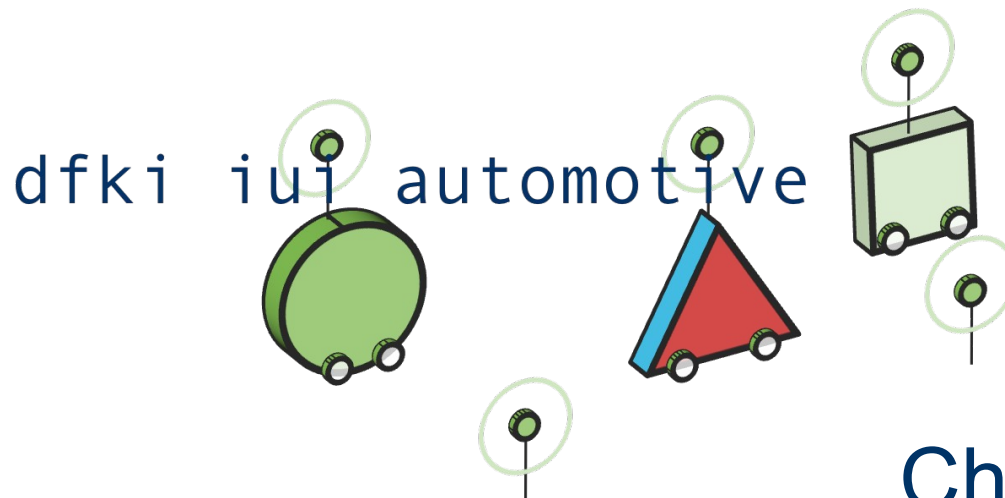
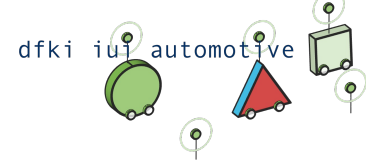


EIT ICT Labs meet W3C on Web Apps for your Car



Christian Müller,
DFKI

Project Landscape with Relevance to Dave's Presentation



Oversee (no DFKI participation)

multilayer platform supporting a guest operating system

OEM: VW

GetHomeSafe

Easy access to email, news, navigation...

Daimler, DFKI

Smart Mobile Apps (not started yet)

SAP, T-Systems, DFKI, BMW

SIMTD (DriveC2X □ European follow-up)

Car2X Communication

Scheduling and priorities applied to notifications (see presentation by Christoph)

SIAM

personalization including voice + camera identification

interaction with the environment

see (video next slide)

Mastertextformat bearbeiten

Zweite Ebene

Dritte Ebene

Vierte Ebene

Fünfte Ebene

Standardization is a new “catalyst” for BP 2013

- opportunity to get funded for activities in this area

Starting an W3C Automotive Business Group.

some EIT ICT Labs partners already signed up.

need 5 signatures in order to officially launch the business group.

Speech Technology in GetHomeSafe

GetHomeSafe:
Extended Multimodal Search and
Communication Systems for Safe In-Car
Application.
Project ID: 288667 Call: FP7-ICT-2011-7

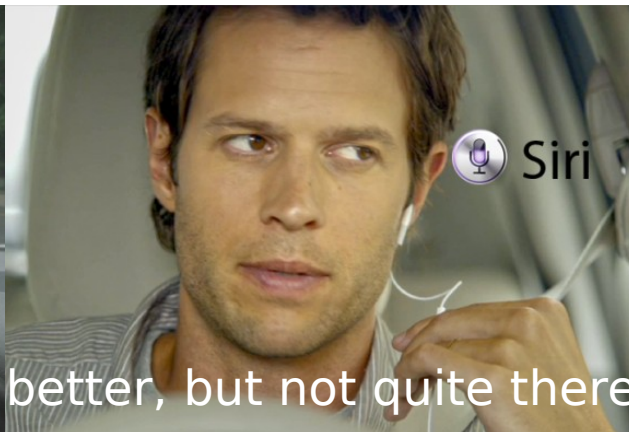
Dr. Christian Müller,
DFKI



Motivation



bad idea!



better, but not quite there



kind of expensive

After a surge in horrific automobile accidents in which distracted driving was proven to be a factor, 38 US states have enacted texting-while-driving bans
But will people comply?

From Siri to Gesi. Our solution will ...

- be consequently designed and validated for in-car use (while driving)
- be highly integrated in the car
- have the latest Nuance hybrid speech recognition and TTS for improved availability, accuracy, coverage and hence user experience
- support multimodal input
- support more complex forms of spoken dialog
- be proactive

High-Ranking Consortium



DAIMLER

Duration 36 months
Budget: 5 ME

IBM





Advanced hybrid **speech recognition component** combining local (embedded) speech recognition with off-board (cloud-based) speech recognition to enable advanced speech functionality in the car: search input, text input

Developing an innovative **speech output module** that can combine various text-to-speech (TTS) voicefonts and flexible parameterization to support various HMI interaction schemes.

Providing speech input and speech output modules **targeted at the functionality** needed for the programme and developing them in an agile, iterative, fashion based on the feedback of the usability and dialogue WP.

Developing a multimodal **human machine interface** that uses multimodal dialog as primary means of interaction

Evaluation of several **HMI concept** variants with different levels of “naturalness” (dialogue + GUI):

Developing **access to web information** (data)

Developing of methods for **integration of new content** of the Internet applications into the existing infotainment system.

Implementation of **optimal HMI concept** in the prototype.

Development of a central **knowledge management component** that links the multimodal dialog management with the other modules and is also used by the other modules.

Provide a consistent and easy to use dialog for **message generation and error-correction** primarily based on speech (WP2) but also on multimodal input

Driving safety will be stressed in design of the system by **reflecting the cognitive load of the driver** during interaction with the goal to minimize the load while keeping an effective interaction.

Incorporate the advanced search capability in the **dialog management**

Developing **humanlike proactive behavior**, a powerful and flexible combination of situation modeling and humanlike techniques for handling the flow of the dialogue.

Situation Awareness based on situational information modeled in WP4.

Awareness of the **Driver's attention** (situation model from WP4)

Humanlike **turn-taking**, grounding, and error handling to minimize cognitive load.

Utilize the flexible speech input and output developed in WP2 and the situation driven dialogue management developed in WP4 in order to develop and evaluate methods for achieving **humanlike proactive behavior**.

Develop **performance metrics** and test procedures for assessing the visual, manual and cognitive aspects of driver workload.

Driving performance measures of driver workload taken under test track and on-road driving conditions

Surrogate metrics which include models, simulations or laboratory procedures

Monitor, analyse and take into account the **situation dependent choices** that the users make about the use of interactive technology.

Provide **prototype systems** on real platforms in multiple iterations. First, a **PC-based prototype** used for HMI concept evaluation and ASR improvements, will be realized.

Integration of prototype in a Mercedes car.
Perform evaluation on a **test track**.

Part of GetHomeSafe: OpenDS



Open-source driving simulation software that meets the requirements of scientific research
Comes with standardized driving tasks from EU projects like HASTE, AIDE, and GetHomeSafe

Receives additional funding by EIT ICT Labs (Open Source Booster)

Commercial exploitation plan by DFKI / EIT ICT Labs Spin-Off white_c.

